

### REMARKS

Applicants acknowledge receipt of an Office Action dated March 7, 2007. In this response, Applicants have amended claims 1 and 5-7. In addition, Applicants have canceled claims 3, 4, and 8-10 without prejudice or disclaimer in order to expedite prosecution by minimizing the number of issues before the PTO in the present application. Applicants expressly reserve the right to pursue the subject matter of these cancelled claims in one or more continuing and/or reissue applications.

Following entry of these amendments, claims 1-2 and 5-7 are pending in the application.

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

#### **Rejection Under 35 U.S.C. § 112, First Paragraph**

On page 2 of the Office Action, the PTO has rejected claims 1-10 under 35 U.S.C. § 112, 1<sup>st</sup> paragraph, as allegedly being non-enabled. Applicants respectfully traverse this rejection for the reasons set forth below.

As an initial matter, Applicants note that, although the Office Action states that claims 1-10 are rejected under 35 U.S.C. § 112, 1<sup>st</sup> paragraph, all of the PTO's comments are directed to claims 5 and 6. Furthermore, Applicants note that claims 5 and 6 have been substantially amended in this response and wish to point out that the acicular silicon crystals are formed on a *silicon* substrate. Reconsideration of the outstanding rejection under § 112, 1<sup>st</sup> paragraph is requested in view of amended claims 5 and 6.

Furthermore, Applicants note that the PTO has suggested that Awano and Chen allegedly disclose Applicants' method (Applicants respectfully disagree) and has stated that Applicants' method produces results which are unexpected *vis-à-vis* Awano and Chen.

As the PTO reconsiders the outstanding § 112, 1<sup>st</sup> paragraph, rejection in view of amended claims 5 and 6, Applicants wish to note that Awano and Chen do not disclose a method identical to the methods of either of amended claims 5 and 6 and certainly do not disclose a method identical to that disclosed in the general discussion or working examples of Applicants' specification. Applicants wish to point out any enablement must necessarily focus on *both* Applicants' claims *and* Applicants' disclosure, *i.e.* the PTO must consider

whether Applicants' disclosure enables a person skilled in the art to make and use Applicants' claimed invention without undue experimentation . Here, Applicants have disclosed a method for making acicular silicon crystals and acicular coated silicon crystals and have included detailed working examples. The outstanding §112, 1<sup>st</sup> paragraph, rejection identifies no specific deficiencies in Applicants' generalized teachings or working examples. Inasmuch as Applicants are entitled to a presumption of enablement, Applicants submit that it is inappropriate to base an enablement rejection on the position that different methods produce different results.

Finally, Applicants wish to thank the PTO for acknowledging that Applicants' method produces unexpected results *vis-à-vis* Awano and Chen.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejection under § 112, 1<sup>st</sup> paragraph.

#### **Rejection Under 35 U.S.C. § 112, Second Paragraph**

On page 3 of the Office Action, the PTO has rejected claim 5 under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph as allegedly being indefinite. Applicants respectfully traverse this rejection for the reasons set forth below.

In this response, Applicants have amended claim 7 to recite a range of resistivity and have cancelled claim 10.

In addition, Applicants have amended claim 5 in a manner which omits the phrase "in such a manner that they are oriented perpendicular to the substrate" thereby rendering moot the issue raised by the PTO regarding the term "they." Applicants submit that this omission does not narrow the scope of claim 5.

In view of these amendments, Applicants respectfully request reconsideration and withdrawal of the outstanding rejection under § 112, 2<sup>nd</sup> paragraph.

#### **Rejections Under 35 U.S.C. § 102**

In the Office Action, the PTO has set forth a number of rejections under 35 U.S.C. § 102 which Applicants summarize below for reference:

- On page 3 of the Office Action, the PTO has rejected claims 1-3 and 8 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Application Publication 2004/0079962 to Kanechika *et al.* (hereafter “Kanechika”).
- On page 4 of the Office Action, the PTO has rejected claims 5, 7, and 10 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent Application Publication 2002/0163079 to Awano (hereafter “Awano”).
- On page 5 of the Office Action, the PTO has rejected claims 5-6 under 35 U.S.C. § 102(e) as allegedly being anticipated by U.S. Patent 6,221,154 to Lee *et al.* (hereafter “Lee”).

Applicants respectfully traverse these rejections for the reasons set forth below.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). See generally MPEP § 2131.

Here, Kanechika fails to disclose an acicular silicon crystal “wherein a surface of the acicular silicon crystal is coated with a thin carbon film and wherein the coated acicular silicon crystal is acicular in shape” as recited in independent claim 1, and Awano and Lee fail to disclose a method for producing an acicular silicon crystal which comprises “sputtering catalytic metal micro particles by applying a direct-current voltage to a silicon substrate under reduced pressure with the silicon substrate, a target of anode side and a catalyst metal, a target of cathode side opposed to each other in an atmosphere of inert gas to uniformly adhere the catalytic metal micro particles on the silicon substrate; and then generating electron discharge plasma by a microwave power during supplying a hydrocarbon-based gas and a carrier gas on the silicon substrate to form acicular silicon crystals with surfaces coated with a thin carbon film” as recited in independent claim 5.

For these reasons, Applicants submit that the outstanding rejections under §102 cannot properly be applied to amended independent claims 1 and 5 (or any claim depending from either of these claims) and ought to be withdrawn.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections under § 102.

### Rejections Under 35 U.S.C. § 103

In the Office Action, the PTO has set forth a number of rejections under 35 U.S.C. § 103, which Applicants summarize below for reference:

- On page 6 of the Office Action, the PTO has rejected claims 4 and 9 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kanechika in view of U.S. Patent 5,383,354 to Doris *et al.* (hereafter “Doris”).
- On page 6 of the Office Action, the PTO has rejected claim 6 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Awano in view of U.S. patent 6,221,154 to Lee *et al.*
- On page 7 of the Office Action, the PTO has rejected claims 7 and 10 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Lee in view of U.S. Patent 6,027,951 to MacDonald *et al.* (hereafter “MacDonald”).

Applicants respectfully traverse these rejections for the reasons set forth below.

As an initial matter, Applicants note that claims 4, 9, and 10 have been cancelled without prejudice or disclaimer. Accordingly, the rejection of these claims is now moot.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, prior art references must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicants’ disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Turning to the remaining rejections, Applicants note Kanechika, Doris, Awano, Lee, and MacDonald fail to teach or properly suggest a method for producing an acicular silicon crystal which comprises “sputtering catalytic metal micro particles by applying a direct-current voltage to a silicon substrate under reduced pressure with the silicon substrate, a target of anode side and a catalyst metal, a target of cathode side opposed to each other in an atmosphere of inert gas to uniformly adhere the catalytic metal micro particles on the silicon substrate; and then generating electron discharge plasma by a microwave power during supplying a hydrocarbon-based gas and a carrier gas on the silicon substrate to form acicular

silicon crystals with surfaces coated with a thin carbon film” as recited in amended independent claim 5.

For at least this reason, Applicants submit that the outstanding rejections are not properly applicable to amended independent claim 5 or to claims 6 and 7 (each of which now depends from claim 5) ought to be withdrawn.

In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the outstanding rejection under § 103.

### CONCLUSION


Applicant believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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